

roofing, M. Langlois, of Limoilou; painting and glazing, J. M. Tardevet. Amount of contracts, \$25,000.

ORILLIA, ONT.—W. H. Croker, architect, has let the contract to the Toronto Furnace Co., for heating by high pressure steam the whole of the Tudhope Carriage Co.'s building.—The contract for heating and plumbing for the Central public school has been let to Purdy, Mansell & Mashinter, of Toronto.

CHATHAM, ONT.—The Council has accepted the following tenders for sewers: Adelaide street, John Illingsworth, \$945; Park street, Jas. Etches, \$105; William street, Hayden & Findlay, \$257. The last named firm was also given the contract for drains on Selkirk and Victoria streets, at \$325 and \$180 respectively.

GOEDERICH, ONT.—Tenders in connection with the electric light plant have been accepted as follows: Goldie & McCulloch, Galt, engine, 10x14, \$1,400; Packard Electric Co., St. Catharines, transformers, \$576; Rogers & Co., London, inside wiring of stores and houses, cleat work, \$1.50, and concealed work, \$2 per outlet. The standpipe and dynamo tenders have not yet been awarded.

LONDON, ONT.—The London and Port Stanley Railway Board have awarded contracts as follows for building the new freight house, round house and other terminals for the use of the Lake Erie & Detroit River Railway here: E. F. Howie, building coal docks, \$160; Everett King, brickwork on round house, \$1,600; John Purdom, carpenter work on round house, \$1,350; J. Garratt, brickwork on freight house, \$1,800; E. F. Howie, carpenter work on freight house, \$1,985; Mcses Cox, drains, 6-inch tile, 21c; 8 inch tile, 25c per foot, \$175; Pace & Fitzgerald, painting, \$116; Smith Bros., plumbing, \$106; J. Brockhurst, iron work, \$70. Total, \$7,362.—Contracts have been awarded for the erection of a warehouse on Bathurst street for Thomas Robinson & Co., Hartlepool, Eng. The cost will be \$3,700.

MONTREAL, QUE.—A. C. Hutchison, architect, has awarded contracts as follows for one residence on Peel street for Doctor Yates: Masonry and brick work, J. B. St. Louis; carpenter and joiner's work, John Allan; plumbing, J. W. Hughes; painting, W. B. Scott; plastering, Knott & Gardiner; roofing, Montreal Roofing Co.; steel work, Dominion Bridge Co.; electric wiring, C. W. Henderson.—W. E. Doran, architect, has awarded the following contracts for one store and three dwellings, corner of Centre and Montmorency street, for John Killilea: all trades, Etienne Robert. Also for two stores and dwellings, corner Lagachetiere and Hermine streets, for F. B. McNamee: Carpenter and joiner's work, R. Neville; masonry, J. B. Quinlan; brick, Gauthier Bros.; plastering, M. McCarthy; painting and glazing, H. O'Brien; iron work, Dominion Bridge Company.

BUSINESS NOTES.

J. Sullivan & Co., carpenters, Montreal, have dissolved partnership.

William Hart, painter, Essex, Ont., is said to have assigned to G. A. Church.

The dissolution is announced of Reid & Daly, railway contractors, Montreal.

Nicholson & Stewart, contractors, Montreal, have dissolved partnership.

CLEANING PAINT.—Cleaning varnished paint is often a troublesome business, and so much rubbing has to be done that the surface gets worn off, and the whole looks shabby. To avoid this use a concentrated solution of spent tea leaves, say, ¼ lb. of the latter to one pint of boiling water. Steep for half an hour, then strain, and use the clear liquor for cleaning the paint.

SUGAR IN MORTAR.

Common mortar, we are told, "is made with fat lime and clean sharp sands, in the proportions usually of one to five by volume." Mortar so prepared hardens promptly in the air, and becomes, finally, very hard, if of good quality, and if frost or too great dryness or excessive dampness does not injure it while setting. Sand used for mixing mortars should be free from clay and perfectly clean; it should be sharp and rather coarse. River sand is much better than sea sand, as it is free from salt, and is less liable to be found "water worn," or, in other words, "sharper," having the angles more definite, thereby increasing its "bounding qualities."

In India the method of making mortar is much better understood than in this country. In mixing his mortar the Indian adds to his slacked lime a certain proportion of "jaggery," a sort of unrefined sugar, which has the quality of making the mortar stronger and more compact than if prepared the ordinary way. "Jaggery" is not only used in the manufacture of mortar for plastering purposes, but it is also employed in mixing mortar for laying brick and stone work. It is related that when Hyder Ali's troops threatened the city of Madras with destruction over a hundred years ago a wall was hastily built up by the citizens to keep the intruders at bay, and "jaggery" mortar was used in the construction, and when it became necessary a few years ago to tear down the wall it was found almost impossible to separate the bricks at the joints, the mortar was so adhesive and so strong, and in many places dynamite had to be employed to rend the work asunder. The polished "chunam" walls, for which Madras is famous, are prepared with neat cement tempered with water in which unrefined sugar has been dissolved. About one and a half pounds of course sugar dissolved in one gallon of clean water, and used in mixing the cement, will form a mass that, when properly set, will make a block harder than the hardest marble, and as tough as our best limestone, and if applied to walls or columns or to any similar work it may be polished as highly as Quincy granite, and which will be just about as durable.

The practice of mixing sugar in mortar is a very old one, and the utility of the practice was well known to the Greeks

and Romans long before our era. Both Vitruvius and Pliny make mention of the manner in which the Romans made their wonderful mortars, and Pliny, who calls the mixture Maltha, says it was made of quicklime slaked in wine and then ground up in figs and lard. This made the surface upon which the mixture was spread, after an application of oil, harder than stone. In this case the wine contained a large percentage of sugar, and as figs contain about 62 per cent. of uncrystallizable sugar, 5 per cent. of gum and phosphate, 15 per cent. of fibrine and grease, the rest being water and chloride of lime, it is quite evident that it was the sugar that gave to the mortar its density and polishable qualities.—National Builder.

FELLING A DANGEROUS CHIMNEY.

There is only one way of saving a chimney out of plumb from collapse if the bend increases—that is, to cut a slice out of the masonry on the other side, so that it may sink on the side and bring itself straight. But that method, though efficacious at times, often weakens the structure. The only other alternative is to pull down and build afresh, and there are two ways of doing that. One is to pull the chimney down stone by stone, beginning at the top—a tedious method, and a terribly risky one, if the structure be tottering to its fall. The other method the writer has often seen practised in Lancashire and Yorkshire. At a mill a few miles outside of Manchester, for instance, a dangerous chimney had to be "felled" not long ago, and the contractor started to cut away the brickwork at the base on five out of its eight sides. Once, thinking it was about to settle on him, he and his men hurried away; but the fall did not take place, and they returned to work. The gaps were propped up with timber, and the structure supported in this way until the proper time. Then the wood was soaked with paraffin and daubed with resin and ignited. The flames and smoke poured up the chimney with a great roar, and the daring man lingered at the foot for a quarter of an hour, feeding the flame at one point, so that the wood might collapse there first, and the chimney take that direction in its fall. At length the baulks gave way, the chimney tottered, then leaned over in a circular fashion, and finally collapsed in the middle and fell in a heap. The climber told the writer that he distinctly preferred to bring a chimney down in that way, for once, while taking down a shaft in North Lancashire district, he heard it groan and creak, and had only time to slip down the rope and rush away when it fell.—Illustrated Carpenter and Builder.

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